KNOWLEDGE ISSUES AND KM TRENDS IN SCIENTIFIC, ENGINEERING, AND TECHNICAL SETTINGS

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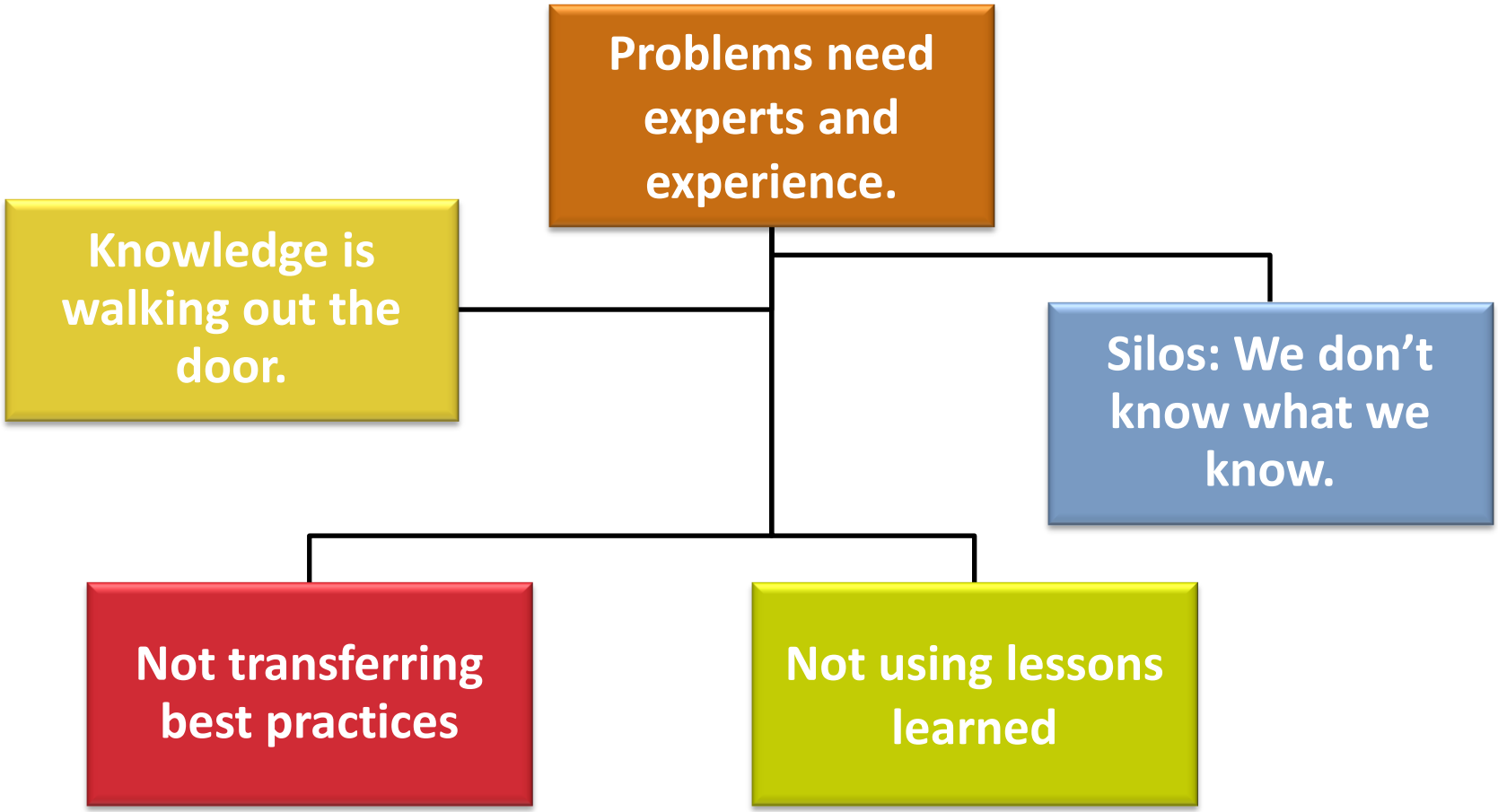
APQC

October 22, 2014

Image Credit: G. Neukum (FU Berlin) et al., DLR, ESA

WHY KNOWLEDGE MANAGEMENT (KM) EXISTS



KM DESIGN PRINCIPLES

1. Start your efforts with focus on the knowledge that matters to the business.
2. Don't reinvent knowledge management (KM) best practices.
3. Embed knowledge sharing approaches in the flow of work.
4. "People" approaches make "system" approaches work.
5. Balance "connect" and "collect".
6. Demonstrate tangible value.
7. Think enterprise-wide.

THE KM TOOLKIT

It used to look like this…

THE KM TOOLKIT

Now it looks like this.

Pressure to Accelerate

- “Be more like Google.”
- "Be more like Facebook.”
- Reduce time to competency.
- Don’t pull employees away from their job.
- Use less face to face knowledge transfer.

Image Credit: NASA

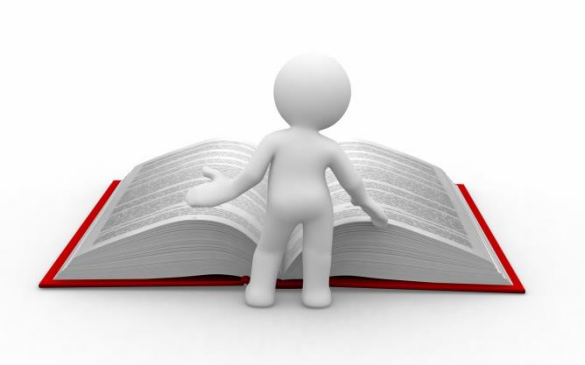
The Rise of the Mobile Device

Thanks to IBM

NASA

What are the most important external forces affecting knowledge management at NASA?

WHY ARE TECHNICAL AREAS SPECIAL?



The Nature of the Knowledge

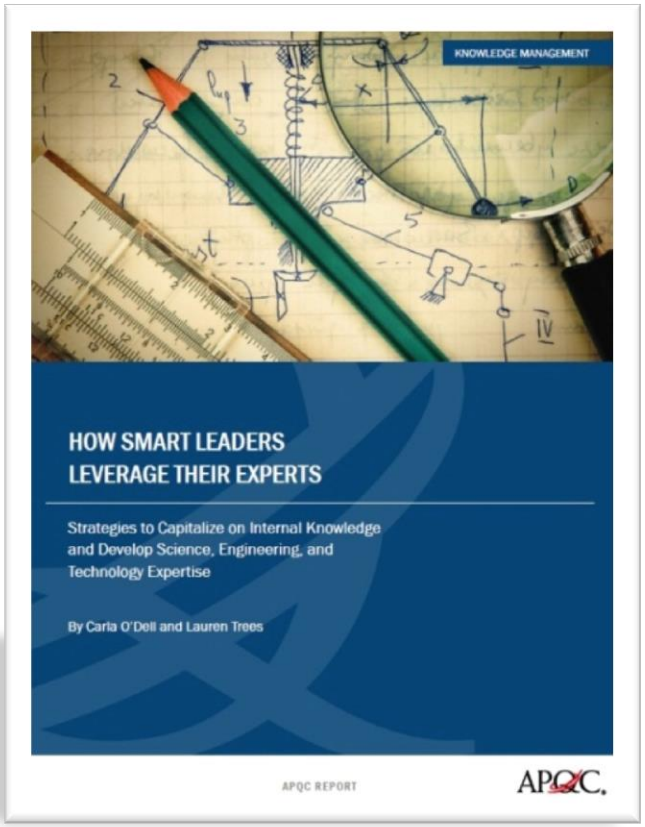
The Nature of the Work

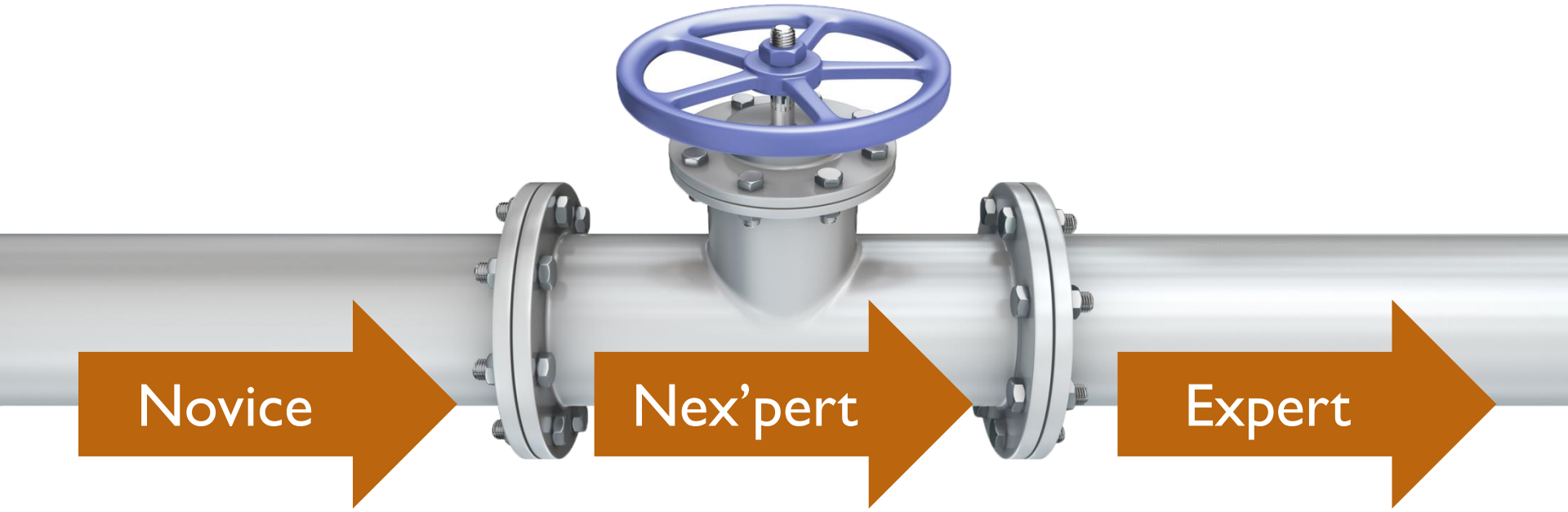
The Nature of Technical Teams

RECENT APQC RESEARCH

"How Smart Leaders Leverage Their Experts"

www2.apqc.org/STEMresearch





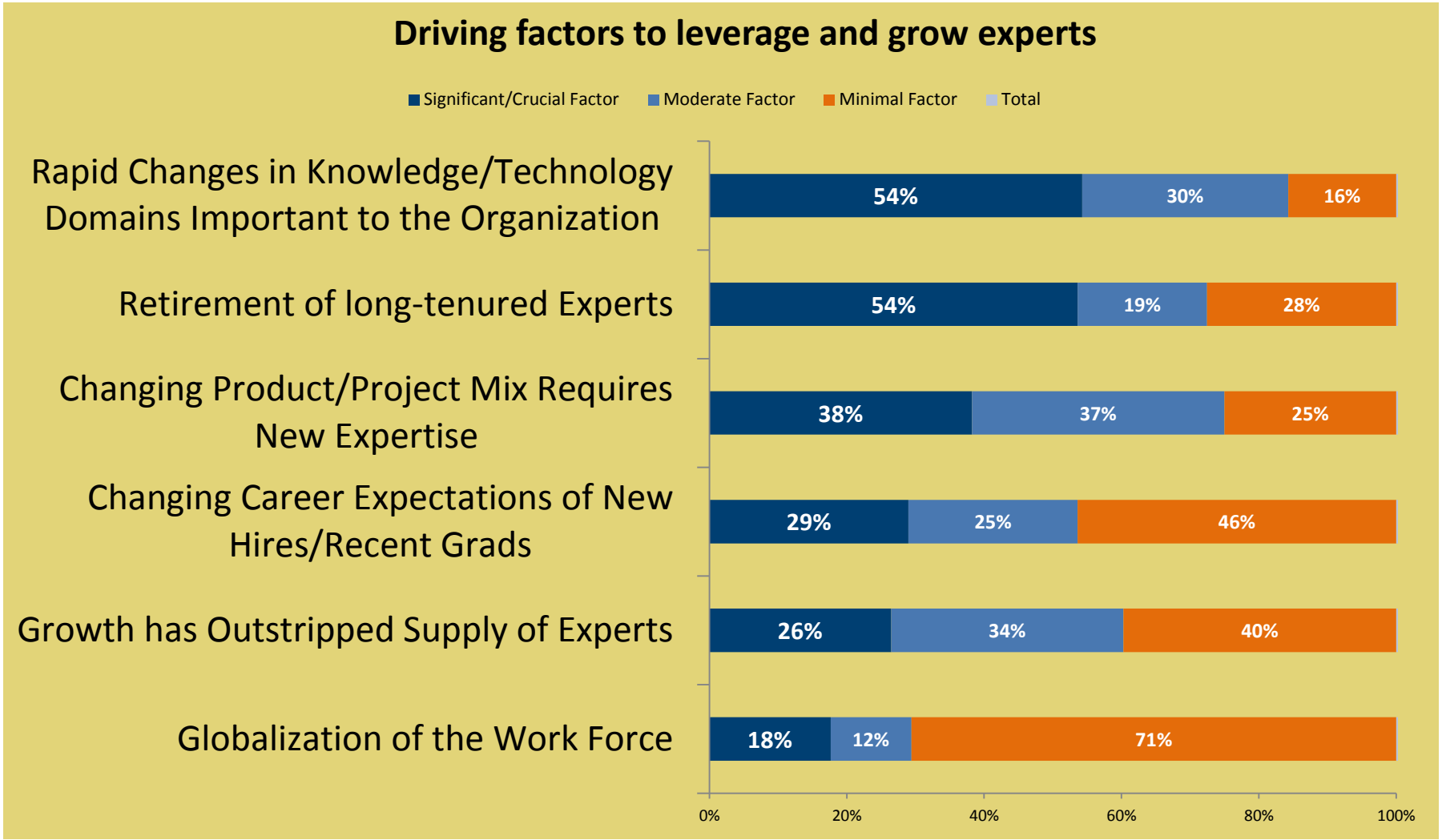
How can scientific, technical, and engineering leaders leverage existing experts to meet the knowledge needs of today and tomorrow?

OUR RESEARCH APPROACH

- Interviewed 14 organizations with a large technical workforce
- Collected data from 757 people in a dozen sectors
  - 69% were from organizations with global operations
  - A quarter of the respondents were technical and engineers
  - 85% said the issue was urgent and on the agenda

- Alcoa
- Baker Hughes
- Chief Oil and Gas
- Deere & Company
- Devon Energy
- Ecopetrol
- Merck
- MITRE
- MWH Global
- Nalco
- NASA
- Pfizer
- Rockwell Collins
- Schlumberger
- U.S. Army ARDEC

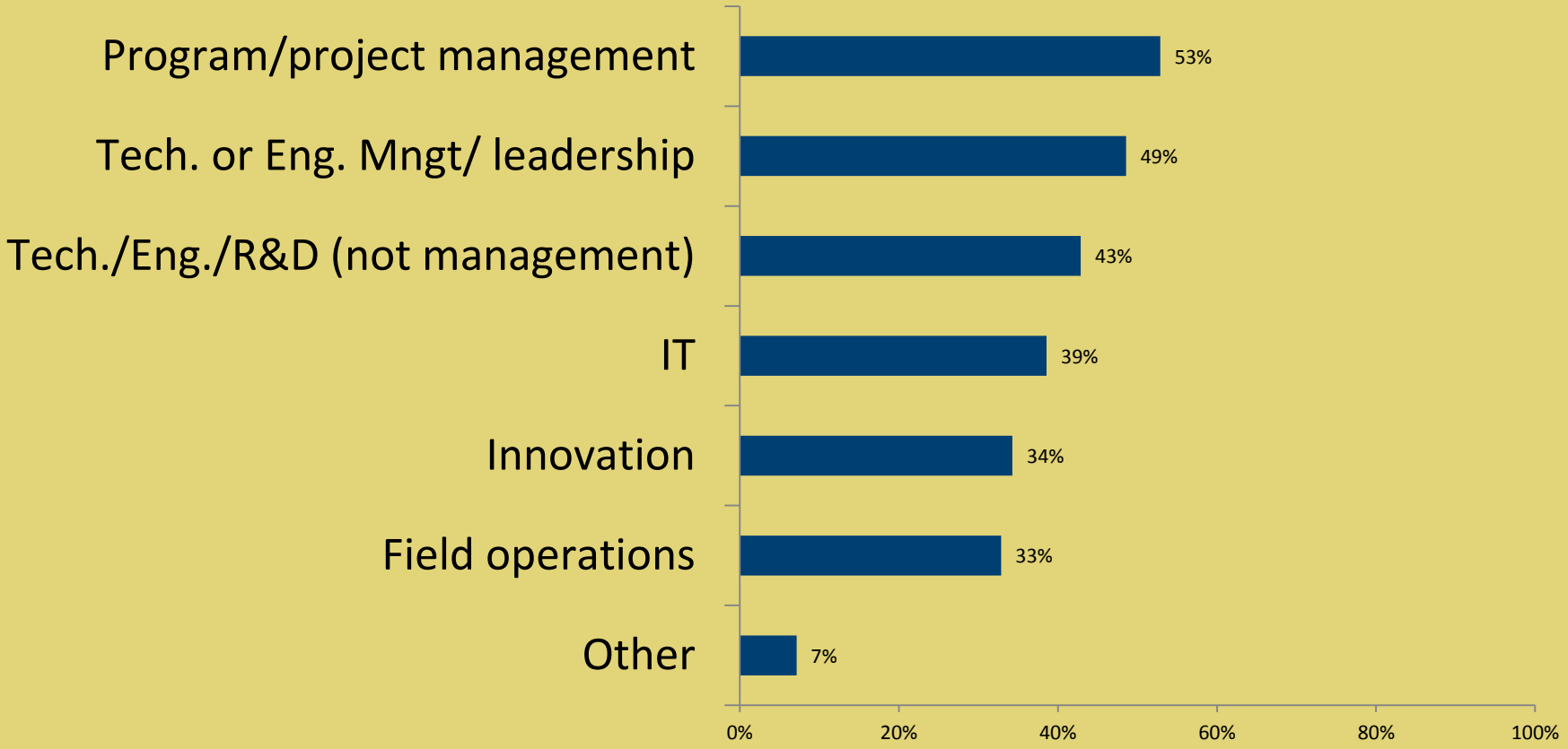
INDUSTRY FINDINGS: GOVERNMENT/MILITARY



n= 70

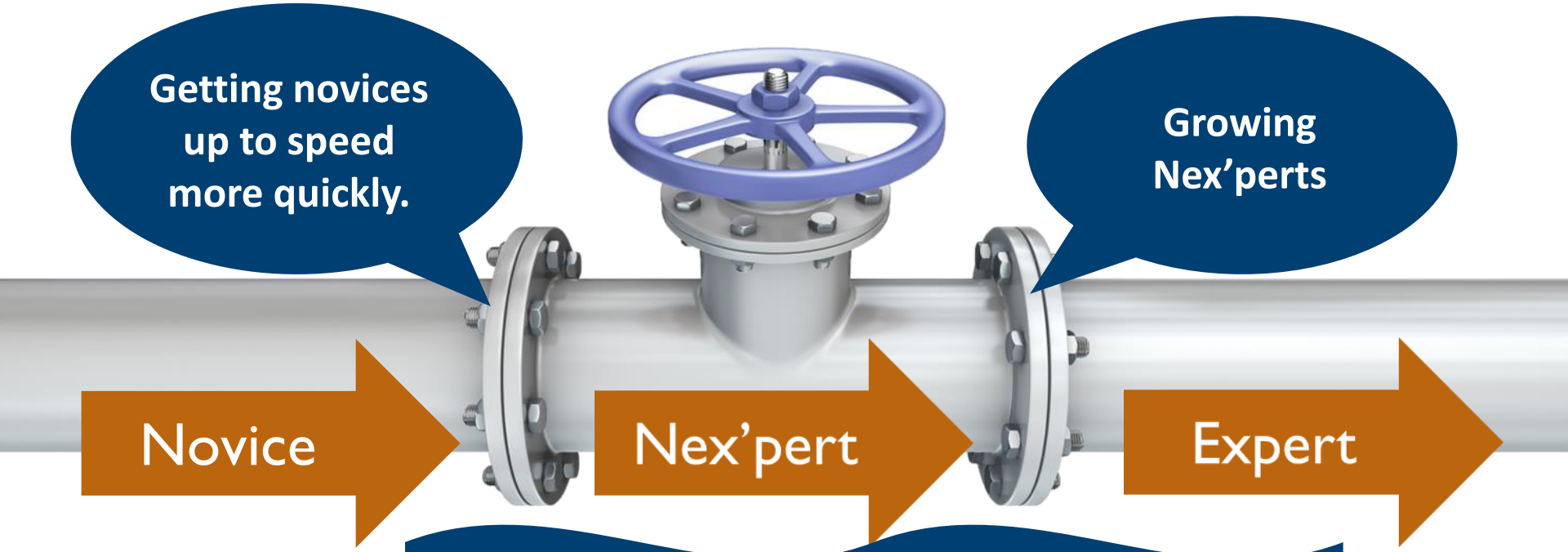
INDUSTRY FINDINGS: GOVERNMENT/MILITARY

In which areas is accelerating the rate of learning most critical? (Select all that apply)



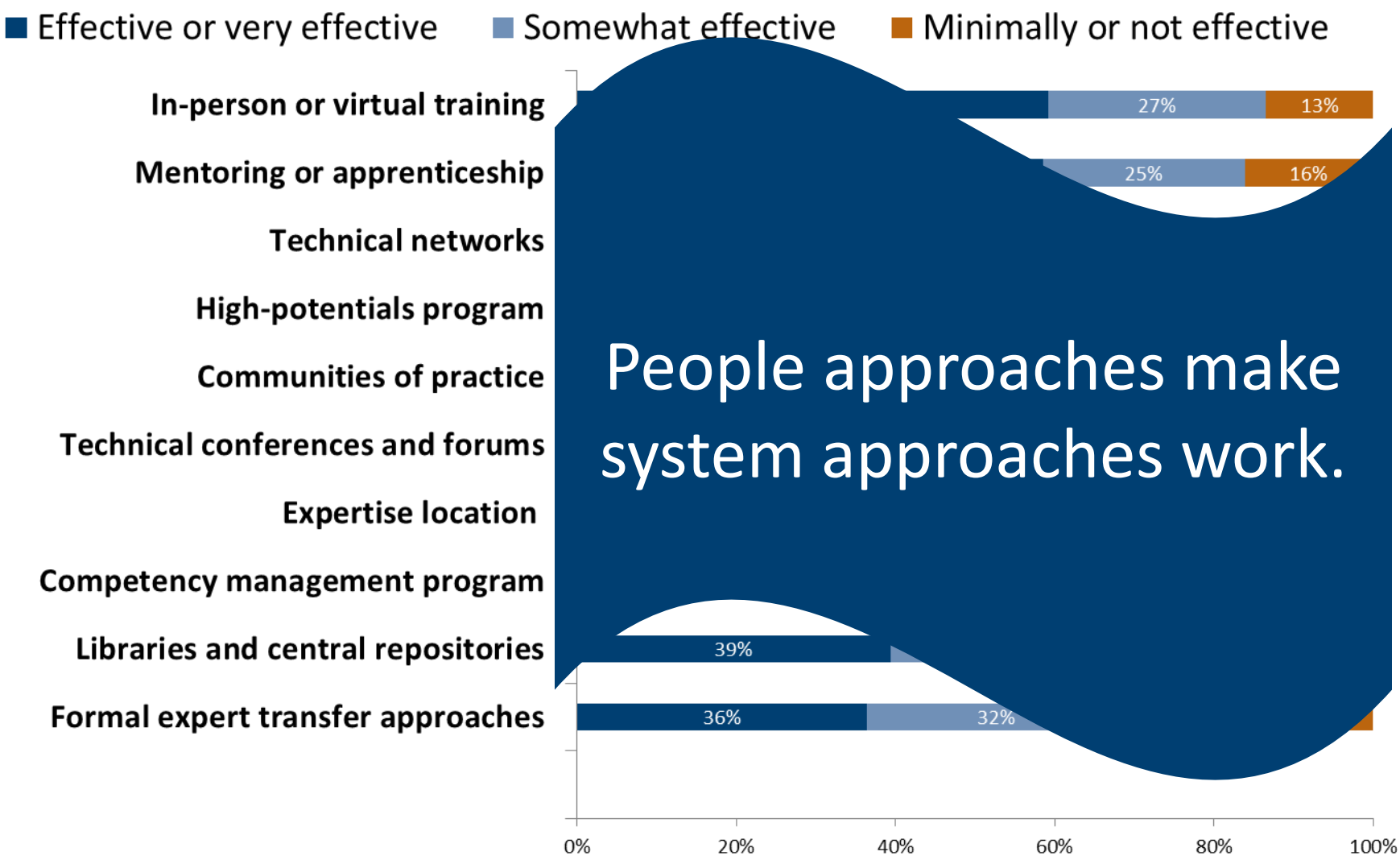
N=737

THERE ARE THREE KNOWLEDGE GAPS



Building Expertise in New Domains

EFFECTIVENESS OF APPROACHES

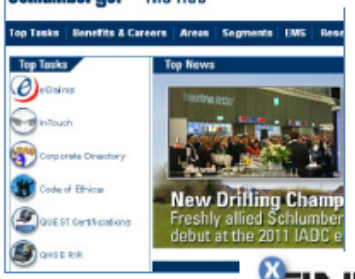


People approaches make system approaches work.

Knowledge Management in Schlumberger
People at the center

InTouchSupport.com
Coupling the Technology Centers to the Field

Tellus Google inside Schlumberge



FIND

People Search

LDAP

BlueTube

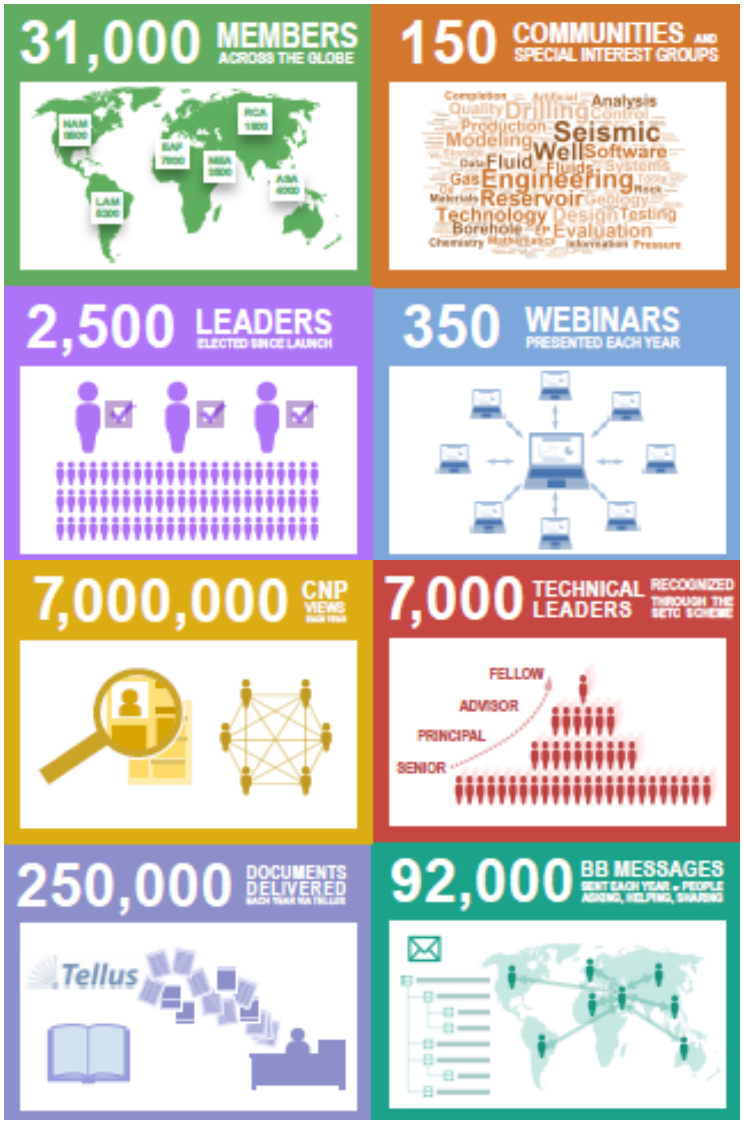
SPEEDIA

Coll@borate
Communicate
Share
Innovate

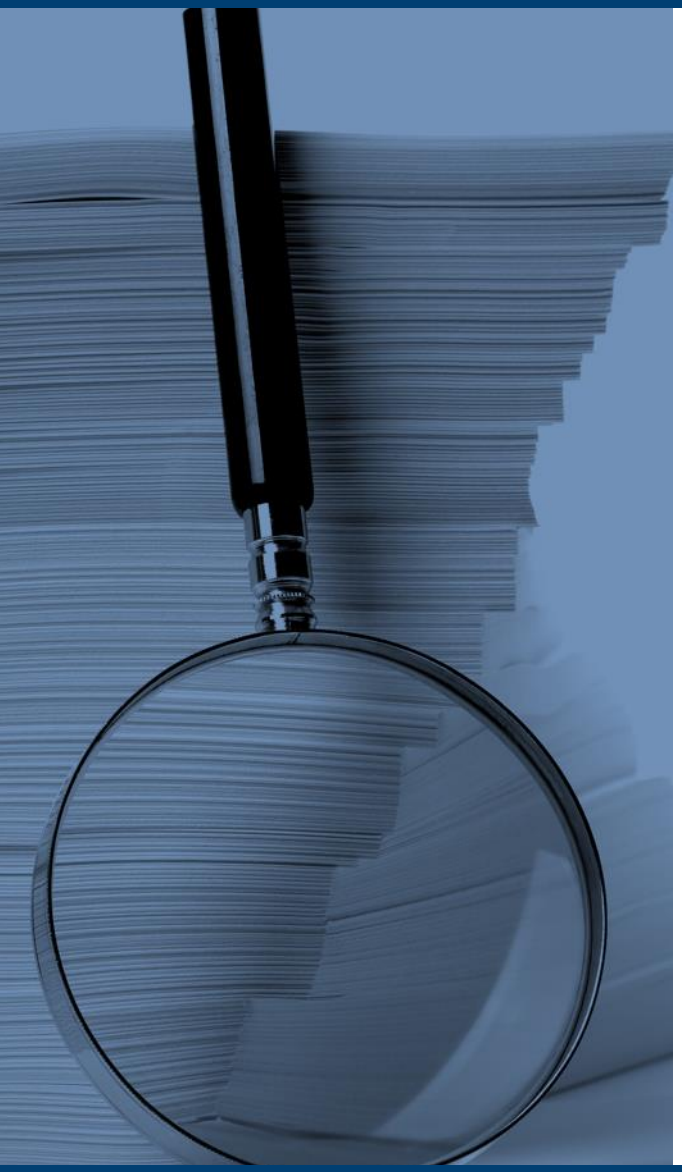
Eureka Communities

SCHLUMBERGER'S EUREKA COMMUNITIES

- Started in 1998
- 50 self-governing groups of individuals with common interests that engage in:
  - Knowledge sharing
  - Problem solving
- Leading a Eureka COP is a coveted professional development opportunity
- Required to receive a technical promotion
- KM Leader also leads Technical Talent Management



BUILDING EXPERTISE IN NEW DOMAINS



- Convene diverse groups of experts and expertise to address new knowledge needs
  - This is not the classic reuse of known expert knowledge.
  - This is the creation of new knowledge by people with the expertise and readiness to do it.
  - The magic is orchestrating their knowledge into something completely new: "New Use"
- Example: Ecopetrol

DON'T FORGET KM DESIGN PRINCIPLES

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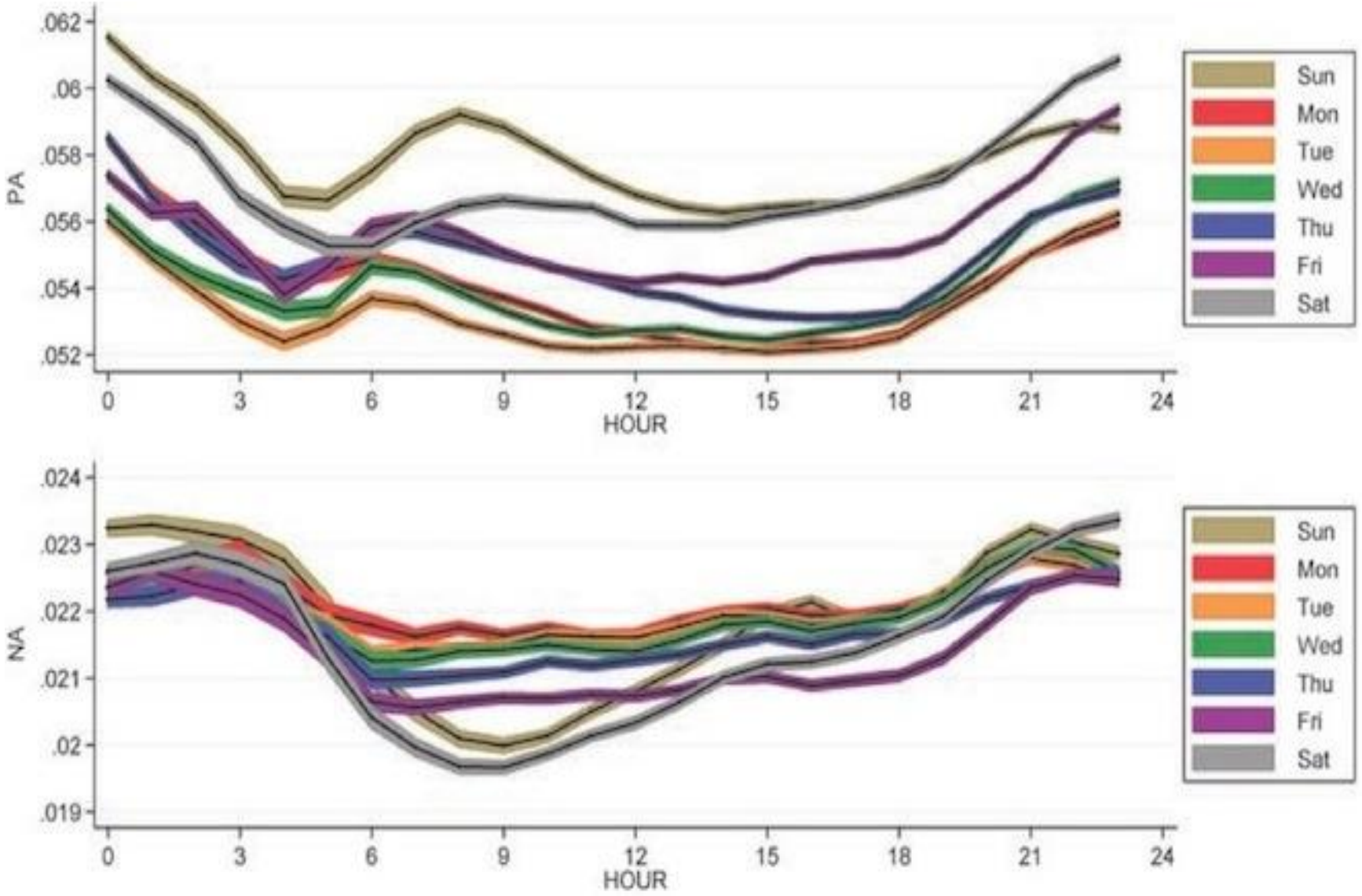
SENSE-MAKING: SENTIMENT ANALYSIS



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FURTHER RESOURCES

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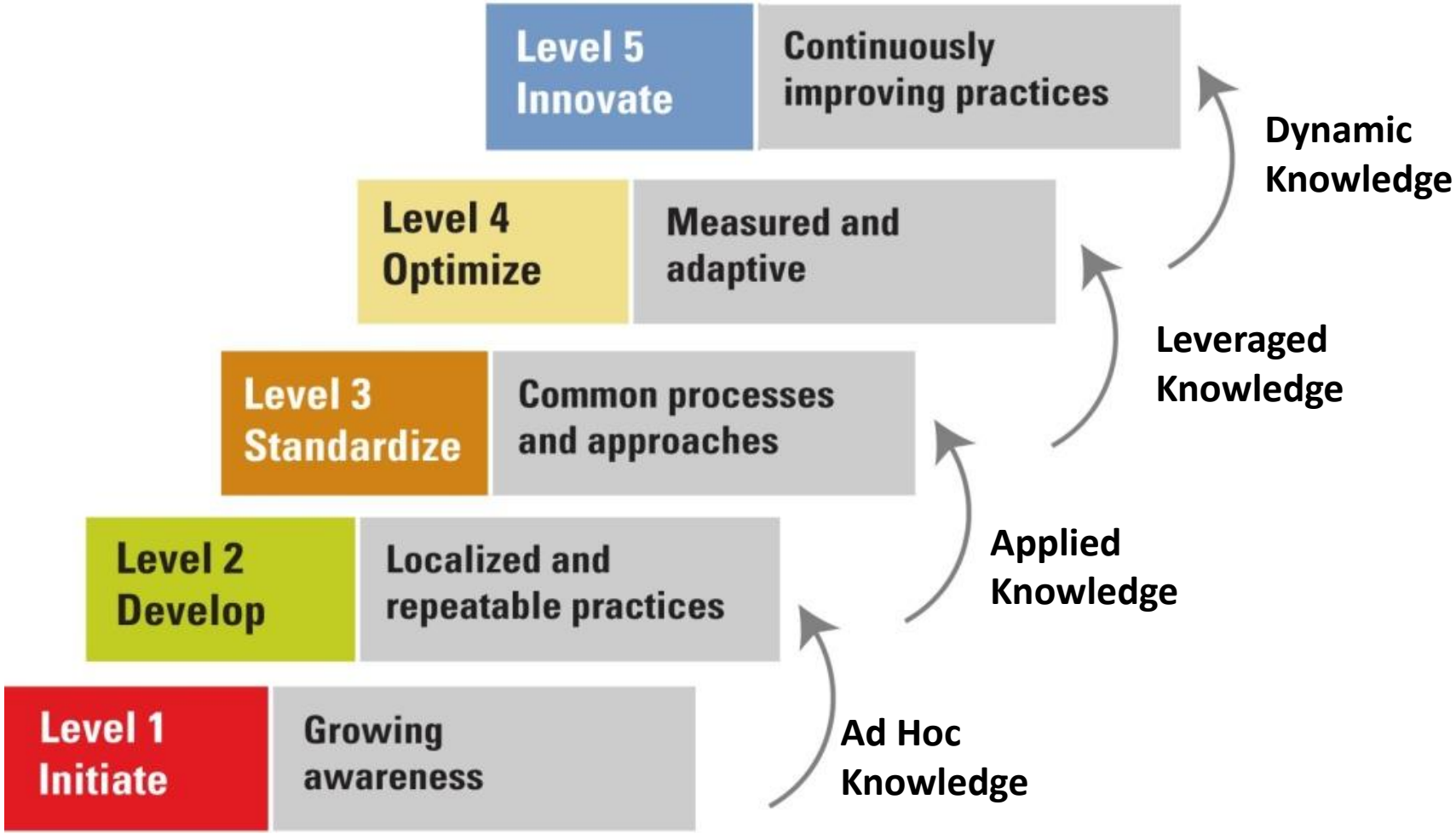
WHO WE ARE

- APQC is a member-based, 501(c)3 nonprofit specializing in benchmarking, knowledge management, metrics and measures, process improvement, frameworks and maturity models.
- Leveraging benchmarks and best practices obtained from more than 7,000 projects, APQC helps organizations to rapidly define and prioritize improvement efforts.
- NASA is an APQC Member with full access.

APQC'S WORK IN KM

- 1995- 1st global conference on KM
- Annual KM conference – 18 years
- 30 major research consortia with over 400 organizations and thousands of best practices
- Worked with over 500 organizations on their KM initiatives
- Huge collection of best practices, tools, cases, and presentations in APQC's Member Knowledge Base
- APQC's Levels of Knowledge Management Maturity℠
- Return on investment research and model
- Global winner of the Most Admired Knowledge Enterprise (MAKE) Award (2008-2012)

APQC'S LEVELS OF KM MATURITY℠

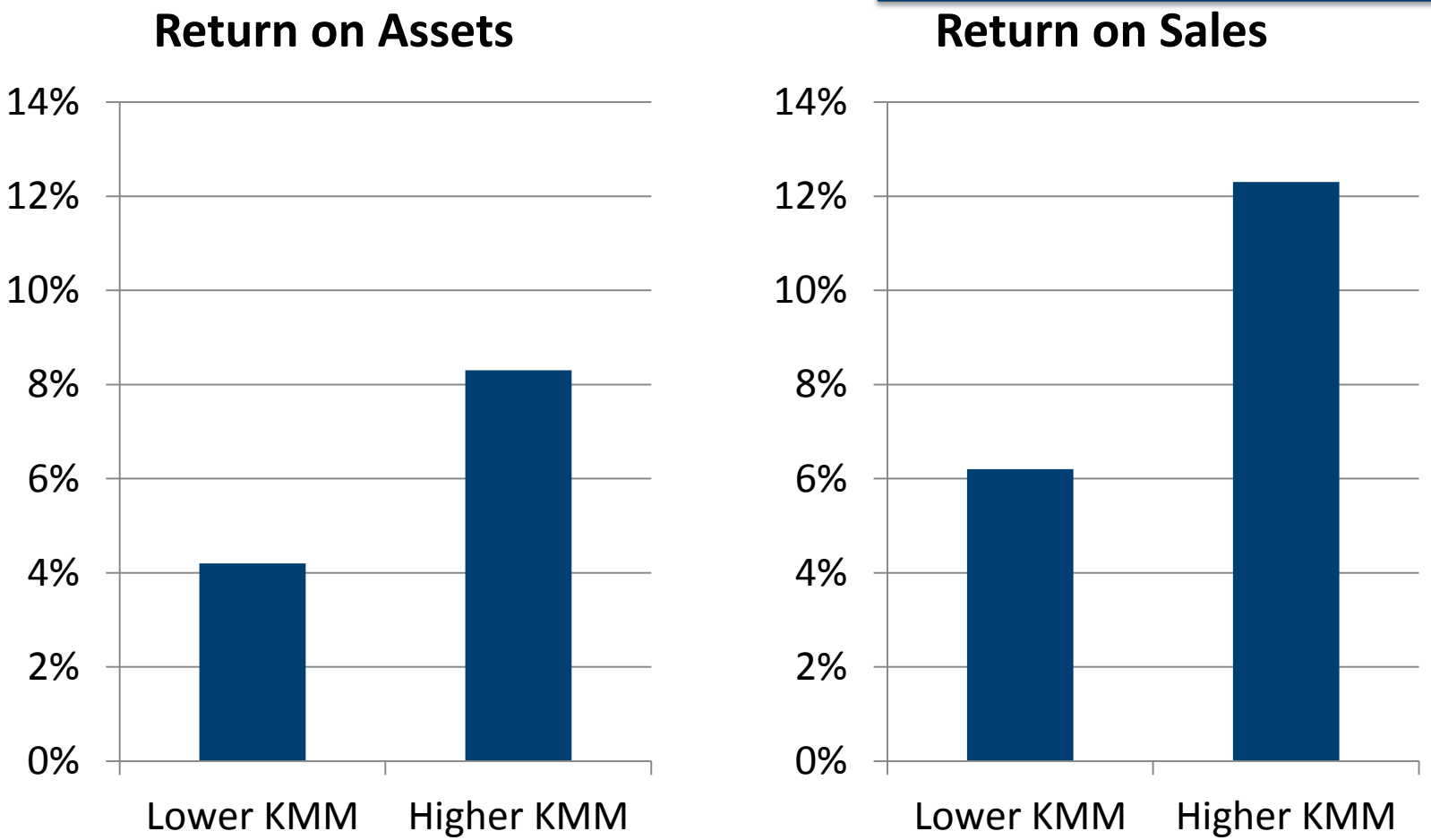


APQC KM CAPABILITY ASSESSMENT TOOL™

STRATEGY	PEOPLE	PROCESS	CONTENT & IT
▪ Objectives	▪ Resources	▪ Knowledge Flow Process	▪ Content Management Process
▪ Business Case	▪ Governance & Leadership	▪ KM Approaches & Tools	▪ Information Technology
▪ Budget	▪ Change Management	▪ Measurement	
	▪ Communication		

KM MATURITY (USING KM CAT)

2x Better Financial Performance with Higher Knowledge Management Maturity



Yokell, M. R. (2010). A Quantitative Correlational Study of the Relationship Between Knowledge Management Maturity (APQC) and Firm Performance

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